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New Publications – AVAILABLE JANUARY 2008

The new *Connections Series* format will allow the ASI to efficiently update connection model theory with new research including provision for electronic delivery under user licence models.

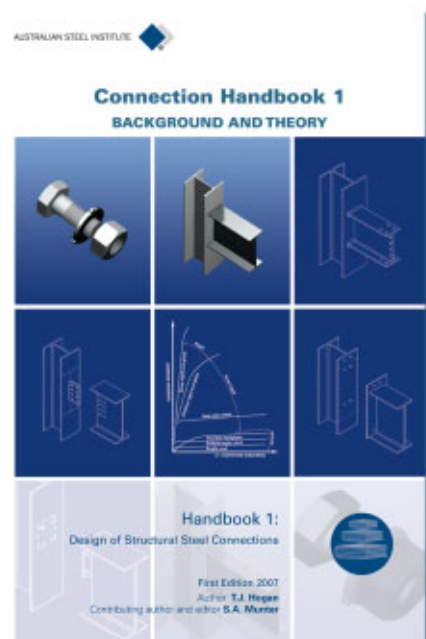
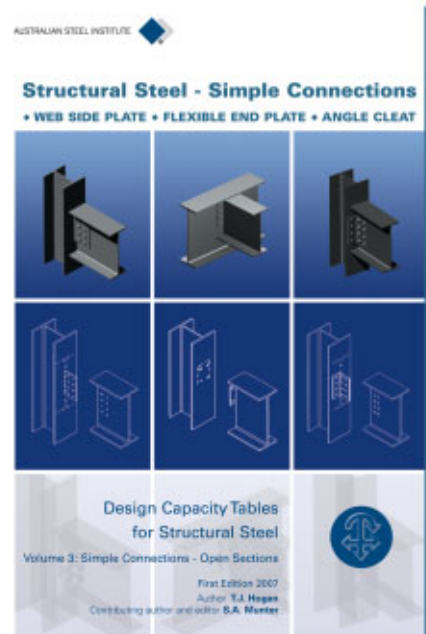
Structural Steel Connections Series, Part 1: 1st ed. 2007 – Australian Steel Institute, Hogan, T.J. & Munter, S.A.

This series features *Design Capacity Tables for Simple Connections – Open Sections* as well as a companion theory *Handbook* and *Design Guides* for connection parts and types, including bolting, welding, web side plate, flexible end plate, angle cleat and seated connections in limit state format to AS 4100-1998. It is the most comprehensive series published by the ASI and further develops these pivotal publications first released in 1978. After three editions released in permissible stress format, the fourth edition of *Design of Structural Connections* (often referred to as the 'Green Book') was released in 1994 in limit state format but without design capacity tables.

Elemental theory in the Design Guides is referenced back to the *Handbook* for each type of connection. The guides include standardised detailing and design capacity tables for each connection designed using the design model provided and are compiled to be kept practical and concise for efficient design assessment. All tables have been rigorously checked by hand calculation, spreadsheet and using the Limcon software for consistency and validity. An abstract for each publication in the series follows and for a more complete description please refer to the ASI's *Steel Construction Journal* for December 2007 (Vol.41, No.2).

Design Capacity Tables for Structural Steel, V3: Simple Connections – Open Sections (65 p) – These tables aim to replace the AISC *Standardised Structural Connections* (3rd edition, 1985) and provide typical details and load capacity tables for web side plate, flexible end plate and angle cleat connections.

Handbook – Design of Structural Steel Connections (125 p) – This companion to the *Design Capacity Tables* and the *Design Guides* updates the connection theory in *Design of Structural Connections* and consolidates industry best practice, references and research papers. The *Handbook* formulates the elemental equations and procedures for assessing bolts, bolt groups, welds, weld groups, connection components and supporting members in standardised structural connections.



Design Guide 1 – Bolting in Structural Steel Connections (57 p) – This revises *Bolting of Steel Structures* to include reference material from former appendices. New developments in specialised direct tension measuring devices are incorporated as well as updated guidance on the standard wrenches for determining erection clearances. Structural designs are now leaner due to advanced analysis, design tools and higher strength of structural members. This positions bolt design actions as critical to design. Minimising designer risk in certification of bolt quality is now essential as all Australian standard high strength bolt assemblies are imported. A simple checklist and guide assists the designer here.

Design Guide 2 – Welding in Structural Steel Connections (61 p) – This has been introduced into the series to complement *Design Guide 1 – Bolting in Steelwork Connections*. This design guide is intended as a basic primer on all aspects of welding of steelwork connections. Welding processes, consumables and procedures are discussed in sufficient detail for the structural engineer to understand how connections are fabricated. Welding in a fabrication shop and bolting onsite are still the key to economical structural steelwork. Critical issues of welding workmanship, imperfections, defects, inspection and repair of welds are also covered. Weld design is dealt with in the *Handbook*.

Design Guide 3 – Web Side Plate Connections (53 p) – Key updates cover support condition, detailing limitations (in particular weld sizing) for standard plate components, refinements to block shear assessments and rotation checks. Local stability of coped beams and local capacity of supporting member checks have been improved. Modified theory for assessing an extended web side plate configuration is included.

Design Guide 4 – Flexible End Plate Connections (39 p) – This cites the theory included in the *Handbook* again to keep the flexible end plate (FEP) connection model concise and practical for efficient design assessment. Significant upgrades to the previous FEP design model are refinements to the block shear assessments and improvement to local stability of coped beams and local capacity of the supporting member checks.

Design Guide 5 – Angle Cleat Connections (65 p) – This robust connection is returning to favour due to the growth of efficient

computer numeric control (CNC) fabrication processes. Significant upgrades from the previous angle cleat (AC) design model include detailing limitations, refinement of block shear assessments and rotation checks. Improvements have been made to local stability of coped beams and local capacity of the supporting member checks.

Design Guide 6 – Seated Connections (95 p) – These important connections are often detailed as part of structural steelwork. Significant upgrades to the previous seated connections are in the isolation of each type of seated connection theory into stand-alone models. This separation, despite making this design guide larger, eliminates confusion and differentiation in detailing and design parameters. It includes stiff seat connection theory, unstiffened angle seat connection, stiffened angle seat connection and bearing pad connection. Many rigorously checked design examples are included.



Authors and editor for the Simple Connections series



Tim Hogan



Scott Munter

Author **Tim Hogan** is Director of SCP Consulting. His holds a B Eng from the University of NSW with First Class Honours and the University Medal. His postgraduate qualifications include M Eng Sc and an MBA. He is a Fellow of the Institution of Engineers Australia with CP Eng status. Tim has helped publish material on connections since being Engineering Manager with the AISC in the late 1970s. In private practice since 1980 he has designed and supervised large steel framed buildings, industrial buildings, mill buildings, retail developments, defence infrastructure and composite buildings. His main published works deal primarily with composite construction, steel connections, fabrication and erection of steel structures. He was a major contributor to and editor of the *Commentary to AS 4100*. He is currently Chairman of Standards Australia Committee BD-001 Steel Structures and BD-032 Composite Construction. He has received an award for contributing to Australian Standards.

Contributing author and editor, **Scott Munter** is now the National Structural Decking Manager for BlueScope Lysaght and was National Manager – Engineering & Construction for the ASI from 2000 to 2007.

Further Connections Publications and Seminar Series

The ASI is currently authoring Part Two of its *Connections* publications for rigid connections including welded beam to column, bolted moment end plate and splice connections. These are due for release in 2008 and will be followed by a series of seminars to provide guidance on the use of all new *Connections* publications.

New Releases – 2008

Design of Cold-Formed Steel Structures, 4th ed. 2007, Hancock, G.J. – The revision to this seminal publication describes the 2005 version of AS/NZS 4600 *Cold-Formed Steel Structures* and demonstrates through design examples how the new latest standard can be used for the design of cold-formed structural members and connections.

Handbook – Composite Design Methodology for Multi-storey Steel Framed Buildings, 1st ed. 2007, Australian Steel Institute/Durack, J. & Kilmister, M. – Connell Wagner – This new publication aims to assist building structural engineers with the design of composite, steel-framed and multi-storey buildings. The text is mainly sets of design calculations covering most aspects of the design and detailing of a steel-framed, composite floored, multi-storey building. The appendices to the text provide necessary background to some of the unique aspects of composite design and interpretation of the Australian Composite Structures Code, AS 2327.1-2003.

The above books will be available from the ASI Bookshop in 2008 in addition to our current list of books – visit our website at www.steel.org.au to download an order form. For any queries you can contact Hayley Rasmussen on (02) 9931 6602 or email bookshop@steel.org.au. ASI members can also borrow these books from the library, if preferred.

Limcon V3.5 for the new ASI Connections Series
Engineering Systems (02) 9488 9622 www.steel-connections.com